ALGEBRA — MODEL NO 1

[Q1] Choose the correct answer:

(1) The S.S : $X < 2$ in N is ....

a) $\{2\}$ b) $\{0, 1\}$ c) $\{1\}$ d) $\varnothing$

(2) The multiplicative inverse of $\sqrt{\frac{9}{4}}$ is ....

a) $\frac{2}{3}$ b) $\frac{4}{3}$ c) $\frac{-3}{2}$ d) $\frac{3}{2}$

(3) If : $(\frac{-2}{3})^{-3} =$ ....

a) $\frac{-27}{8}$ b) $\frac{-8}{27}$ c) $\frac{8}{27}$ d) $\frac{27}{8}$

(4) $3^4 + 3^4 + 3^4 =$ ....

a) 3^{12} b) 9^4 c) 9^{12} d) 3^5

(5) If : $x^{-1} = 2$ $then\ x = \cdots$

a) $\frac{-1}{2}$ b) 2 c) -2 d) $\frac{1}{2}$

(6) If A is an event in sample space , then P (A) may be = ...

a) -0.2 b) 87% c) 1.05 d) $\frac{3}{2}$

[Q2] Complete each of the following:

1) The probability of an impossible event = ...

2) If : $0.0075 = 7.5 \times 10^k$, $then\ k =$ ....

3) If : $x = y$ then $(\frac{2}{3})^{x-y} =$ ....

4) The side length of square its area $16\ cm^2$. is .... Cm.

5) If : $5\ y = 20$, then $y^2 =$ ....

[Q3]

A) Find in the simplest form : $\left(\frac{2^{5} \times 3^{2}}{2^{3} \times 3^{4}}\right)^{-1}$

____

B) The difference between two rational numbers is 4 . and their sum is 14. Find the two numbers?

[Q4]

A) Find the solution set in Q : $2 - 3X < 8$

____

B) Find in the simplest form : $\sqrt{\frac{49}{25}} \times \left(\frac{7}{5}\right)^{-1} \times \left(\frac{3}{5}\right)^{0}$

[Q5]

A) Find the solution set in Q : $5X + 7 = 17$

____

B) A box contains 8 cards numbered from 1 to 8 .Write sample space if a card is drawn randomly.

Calculate the probability of drawing card carrying :

① An odd a number divisible by 3

② A number is greater than or equal 6

End of the questions

ALGEBRA – MODEL NO 2

[Q1] Choose the correct answer:

(1) The multiplicative inverse of $(2^3 + 2^3) =$ ....

a) 2^4 b) 3^2 c) 4^6 d) $\frac{1}{16}$

(2) The smallest odd prime number is ....

a) 1 b) 2 c) 3 d) 5

(3) If tossing a fair die once, and observing the number on upper face, then the probability of getting a number 6 = ...

a) 1 b) $\frac{1}{2}$ c) 0 d) $\frac{1}{6}$

(4) $3^x + 3^x + 3^x =$ ....

a) 3^{3x} b) 9^x c) 3^{x+1} d) 3^{x-1}

(5) If : 3 x = 1 , then $x^{-1} =$ ....

a) $\frac{1}{3}$ b) 3 c) $\frac{-1}{3}$ d) - 3

(6) If the thin of a paper 0.012 cm . then the thin of 400 papers = ...

a) 48 b) 4.8 c) 0.48×10^{-4} d) 4.8×10^{-4}

[Q2] Complete each of the following:

1) $2 \times 6 - 4 \div 2 =$ ....

2) The probability of a certain event = ...

3) $3\ x^0 =$ .... , where $x \neq 0$

4) The S.S : $-x < 0$ in N is ....

5) If $\sqrt{x+3} = 3$ then x = ...

[Q3]

A) Find in the simplest form : $\left(\frac{5^{3} \times 5^{-2}}{5^{-1} \times 5^{4}}\right)^{-2}$

B) Find the solution set in Q : $2X + 5 < 17$

[Q4]

A) Two numbers their sum is 14 , and the difference between them is 4 . Find the two numbers ?

B) If : $x = \frac{-3}{2}$, $y = \frac{1}{2}$, $z = \frac{-4}{3}$ Find the numerical value of : $\frac{x^2y^2z^2}{x+y}$

[Q5]

A) Find the solution set in Q : $3X + 1 = X + 25$

B) If tossing a fair die once, and observing the number on upper face , then Find the probability of getting :

① An even number
② a number divisible by 3
③ a number greater than 6
④ a number x : $1 < x \leq 6$

End of the questions

[Q3] A) A man's age now is three times his son's age and after two years, the sum of their ages will be 52 years. What is the age of each now?

B) If : $a = \frac{-1}{2}$, $b = 2$, $c = \frac{-1}{2}$ Find : $a^3b^2 + b^2c - 8abc$

[Q4] A) Find in the simplest form : $\left(\frac{9^3 \times 9}{9^5}\right)^{-2}$

B) Find the solution set in Q : $9 \le 3X + 2 < 12$

[Q5] A) Find the solution set in Q : $X + 3 = 18 - 2X$

B) A box contains 25 cards numbered from 1 to 25 .a card is drawn randomly. Calculate the probability of drawing card carrying:

① An even number

② A number divisible by 5

③ A number is greater than or equal 20

④ a number is a perfect square

End of the questions

[Q3] A) A man's age now is three times his son's age and after two years, the sum of their ages will be 52 years. What is the age of each now ?

B) If : $a = \frac{-1}{2}$, $b = 2$, $c = \frac{-1}{2}$ Find : $a^3b^2 + b^2c - 8abc$

[Q4] A) Find in the simplest form : $(\frac{9^3 \times 9}{9^5})^{-2}$

B) Find the solution set in Q : $9 \leq 3X + 2 < 12$

[Q5] A) Find the solution set in Q : $X + 3 = 18 - 2X$

B) A box contains 25 cards numbered from 1 to 25 .a card is drawn randomly. Calculate the probability of drawing card carrying:

① An even number

② A number divisible by 5

③ A number is greater than or equal 20

④ a number is a perfect square

End of the questions

ALGEBRA – MODEL NO 4

[Q1] Choose the correct answer:

(1) a × a × a × b × b × b= .....

a) ab^6 b) ab^3 c) $(a\,b)^6$ d) $(a\,b)^3$

(2) 0.00000327 = ...

a) 3.27×10^{-6} b) 32.7×10^{-5} c) 3.27×10^{5} d) 327×10^{4}

(3) Half the number $(4^{20}) = \cdots$ ... .

a) 2^{20} b) 4^{10} c) 4^{19} d) 2^{39}

(4) The probability of an impossible event = ...

a) 3^0 b) 1 c) ϕ d) 0

(5) $x^m \times x^m \times x^m =$ .... Where $x \neq 0$

a) x^{m^3} b) $3x^m$ c) $3x^{3m}$ d) $(x^m)^3$

(6) The S . S : $-2X < 0$ in N is ....

a) $\varnothing$ b) N c) Z^- d) Z^+

[Q2] Complete each of the following:

1) If the age of Ali now (x + 6) then his age after 5 years is............

2) If the probability that a pupil succeed is $\frac{4}{7}$ then the probability of his failure = ...

3) If : x = y , then $(\frac{3}{5})^{x-y}$ =..........

4) The multiplicative inverse of ($\sqrt{\frac{16}{25}}$) is .... in the simplest form

5) 7 a = 30 , then 14 a – 1 = ...

[Q3]

A) Find in the simplest form : $\left(\frac{7^{-5} \times 7^{10}}{7^{4}}\right)^{-1}$

B) The length of rectangle exceed its width by 4 m. and its perimeter is 68 m. Find the area of rectangle ?

[Q4]

A) Find the solution set in Q : $6X + 1 \leq 5x - 2$

B) Find in the simplest form : $\frac{x^{7} \times x^{5}}{x^{4} \times x^{6}}$

[Q5]

A) Using order operation to Find: $2^{4} - \sqrt{(3 \times 5)^{2} - 3^{4} + 5^{2}}$

B) A box contains 4 green balls , 5 red balls and 6 black balls. If we draw one ball randomly, Find the probability of getting:

① Black ball ② green ball

③ not red ball ④ green or red ball

End of the questions

ALGEBRA – MODEL NO 5

[Q1] *Choose the correct answer:*

(1) $\sqrt{9+16} = 3 + \dots\dots\dots$

a) 4 b) 2 c) 15 d) 22

(2) If : $0.0035 = 3.5 \times 10^{n}$, then n = ...

a) 2 b) 3 c) −3 d) − 4

(3) The quarter (4^{20}) =........

a) 2^{20} b) 4^{5} c) 4^{19} d) 2^{39}

(4) If : $x^{y} = 3$, z = 2 , then x^{yz} =......

a) 5 b) 6 c) 8 d) 9

(5) P(A) = ..., where A is an event of an experiment

a) 1.9 b) $(0.9)^{2}$ c) $\frac{5}{4}$ d) - 0.05

(6) If : $-x < 4$ then ....

a) X > - 4 b) X > 4 c) X < - 4 d) X < 4

[Q2] Complete each of the following:

1) The multiplicative inverse of $\sqrt{\frac{16}{25}}$ is ....

2) When tossing a coin once the probability of appearance head is...

3) Three times a number is 6, then double of this number is ......

4) (1 , 2 , 3 , 5 , 8 , ...) complete in the same pattern.

5) If : $2^{x} = 32$, then 2x = ...

[Q3]

A) Find in the simplest form : $\frac{4^{-2} \times (2 \times 3)^{8}}{(3^{2})^{4}}$

B) The sum of two consecutive even numbers 18 , and the smaller is x . Find the two numbers?

[Q4]

A) Find the solution set in Q : $6x + 1 \leq 7 - 6x$

B) Find in the simplest form : $\frac{x^{7} \times x^{6}}{x^{4} \times x^{5}}$ where $x \neq 0$

[Q5]

A) Find in the simplest form : $\frac{3}{2} + (\frac{-3}{2})^{2} \times \sqrt{\frac{16}{81}} - (\frac{-2}{3})^{0}$

B) A box contains 5 green balls , 6 blue balls and 4 black balls. If we draw one ball randomly, Find the probability of getting:

① Black ball ② Green ball

③ Red ball ④ Green or blue ball

End of the questions

ALGEBRA – MODEL NO 6

[Q1] Choose the correct answer:

(1) The S.S of the inequality $2 < X \leq 3$ in N is ....

a) {2} b) {3} c) {2, 3} d) $\varnothing$

(2) 2.37×10^{-4} = ...

a) 0.00237 b) 0.000237 c) 23700 d) 0.0000237

(3) The additive inverse of $(-3)^{zero}$ = ...

a) 1 b) -3 c) 3 d) $-(3)^{zero}$

(4) Which of the following is the probability of occurrence of an event ?

a) 1.2 b) - 0.4 c) 275% d) 75%

(5) $3^{-1} + 3^{-1} + 3^{-1}$ = ...

a) 3^{-2} b) 3^{2} c) 9^{-3} d) 1

(6) If $\frac{26}{k} + 1 = 14$ then K = ...

a) 2 b) 10 c) 13 d) 15

[Q2] Complete each of the following:

1) $2((5^2 + 1) - (4^2 - 1))$ = ...

2) If $X = \frac{1}{2}$, $y = 2$ then $X^{100} y^{101}$ = ...

3) If $\frac{x}{y}$ is rational number, and $(\frac{x}{y})^2 = \frac{9}{16}$ then $(\frac{x}{y})^3$ = ...

4) Largest of the two numbers $((-2)^3)^4$, $((-2)^5)^3$ is ....

5) A class with 25 boys and 20 girls if the chosen one of them randomly then the probability of choosing a girl =..............

[Q3]

A) Put in simplest form $\left(\frac{3^3 \times 3^{-2}}{3^{-1} \times 3^4} \right)^{-2}$

B) Find the s. s of the inequality in Q:

$4 - 5 (X - 2) \leq -2 (-9 + 2 X)$

[Q4]

A) A man's age now is three times his son's age and after two years the sum of their ages will be 52 years. What is the age of each now?

B) if $X = \frac{-1}{2}$, $Y = \frac{3}{4}$, $Z = \frac{-3}{2}$ Find the value of the expressions $\frac{X}{Y.Z}$

[Q5] A) Find in Q the S.S of the equation:

$5 X - 4 = 2 X + 11$

B) The set { 2 , 3 , 5 } is used in writing a 2-digit number . Find the probability of each of the following events:

1) The tens digit is odd
2) The units digit is odd
3) The sum of two the two digits is 7
4) The product of the two digits is 15

End of the questions

ALGEBRA – MODEL NO 7

[Q1] Choose the correct answer:

(1) If $0.00079 = 7.9 \times K$ then K = ...

a) 10^{3} b) 10^{-3} c) 10^{-4} d) 10^{4}

(2) If $X = \sqrt{\frac{1}{4}}$ then X^3 = ...

a) $\frac{3}{8}$ b) $\frac{1}{8}$ c) $\frac{1}{16}$ d) $\frac{1}{64}$

(3) The probability of occurring of the certain event = ...

a) 0 b) 1 c) 2 d) 3

(4) If $Y = (\frac{1}{2})^X$ and $X \in \{0, 1, 2, 3\}$ then Y take the greatest value when X = ...

a) 0 b) 1 c) 2 d) 3

(5) If $2A + 3 = 15$ then $\frac{1}{3}A$ = ...

a) 2 b) 6 c) 12 d) 15

(6) If $\frac{X}{2} < 5$ then X < ....

a) 10 b) 5 c) 2 d) 1

[Q2] Complete each of the following:

1) The side length of the square whose area $16X^2$ cm^2 = ...cm

2) If the probability of success of a student is 70%, then the probability of his failure = ...

3) $12 \times 22 \div 24 + 32$ = ...

4) $X^{-4} + 1 = X^{-4}$ (...... + ...)

5) If $\frac{X}{Y} = \frac{5}{7}$ then $(\frac{-3}{4})^{7X-5Y}$ = ...

[Q3]

A) Write the result in the standard form $(3.8 \times 10^5) + (4.6 \times 10^4)$

B) Find the S.S of the inequality: $\frac{3X-2}{5} \geq \frac{1}{2}$

[Q4] A) Find the number which if add to its double the result is 32

B) Simplify $\frac{(6)^{2x+3}}{(3)^{x+3} \times (2)^{x+1}}$ then Find the value when X = 1

[Q5] A) Find the value of X when X + 3 is the additive inverse of the number $2X + \frac{3}{4}$.

B) A cube is designed such that each two opposite faces carry on of the digits 1 ,2 and 3 the cube is rolled and apparent face is observe:

1) Write down the sample space .

2) Find probability that the number on the upper face is 2 ?

3) Find probability that the number on the upper face is odd ?

End of the questions

ALGEBRA – MODEL No 8

[Q1] Choose the correct answer:

(1) If $2^x = 5$ then 2^{x+1} =..........

a) 6 b) 7 c) 10 d) 64

(2) If $0.000502 = K \times 10^{-5}$ then K = ...

a) 502 b) 5.02 c) 50.2 d) 0.502

(3) The sum of the square roots of a number $6\frac{1}{4}$ = ...

a) $3\frac{1}{2}$ b) $\frac{5}{2}$ c) $\frac{-5}{2}$ d) zero

(4) $\frac{(2 a b^{-2})^{zero}}{(3)^{zero} (a)^{-2} b}$ = ...

a) $\frac{a}{3b}$ b) a^2 c) 1 d) $\frac{a}{b}$

(5) If X ∈ { 1, 2, 3 } then the S.S of the equation 3 X = 12 is ....

a) { 4 } b) ∅ c) { 3 } d) { 2 }

(6) If $-X \leq 3$ then X ....

a) ≥ 3 b) ≤ 3 c) ≥ -3 d) ≤ -3

[Q2] Complete each of the following:

1) $\sqrt{100} = \sqrt{36} + \sqrt{\ldots\ldots}$

2) $9 \times 42 \div 22 \times 3$ = ...

3) $X^{-4} + X^{-3} = X^{-4}$ (.....+ .....) when $x \neq 0$

4) If $2^X = 3$, $3^Y = 5$ then 2 x y =.......

5) A school has **480** students who have failed **120** of them. If a student is chosen at random, the probability that he will be successful ....

[Q3] A) In the rational numbers Find the S.S of each of the following:

① $\frac{5}{3}X - 1 = 9$ ② $3X - 1 < 11$

B) write the result of the following in standard form:

$$(5.3 \times 10^8) - (0.8 \times 10^7)$$

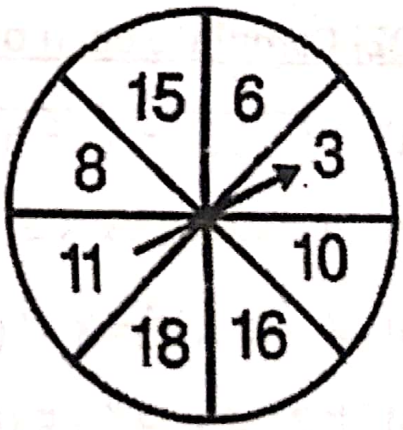
[Q4] A) The length of a rectangle is twice its width. If the length decreases by 7 cm and the width increases by 3 cm, then the rectangle becomes a square. Find the area of the rectangle.

B) Simplify $\left(\frac{3^4 \times 2^{-2}}{3^5 \times 2^{-3}}\right)^{-2}$

[Q5] A) if $X = \frac{5}{3}$, $Y = \frac{-3}{2}$, $Z = \frac{2}{5}$, Find in simplest form $\left(\frac{2XY}{5Z}\right)^3$.

B) In the opposite spinning game if the pointer of the spinner is spanned and stopped at one sector Finds:

1) probability of stopping the pointer at a number divisible by 3
2) probability of stopping the pointer at a number perfect square
3) probability of stopping the pointer at a number represent the inequality $5 < X < 6$



End of the questions

ALGEBRA – MODEL No 9

[Q1] Choose the correct answer:

(1) If X+ 3 = 2 then the S.S of the ⊂ of ....

a) {3 , 2}   b) N   c) Z -   d) Z +

(2) The number of solution of the equality $\frac{1}{3} < X < \frac{2}{3}$ when X ∈ Q is................

a) zero   b) 1   c) 2   d) Infinite number

(3) If $2^x = 3$ then 4^x = ...

a) 6   b) 9   c) 10   d) 64

(4) 4000 × 5000 =.........

a) 200×10^2 b) 20×10^5 c) 2×10^7 d) 20×10^4

(5) If $3\,A = \sqrt{4}\,B$ then $\frac{A}{B}$ = ...

a) 2 : 3   b) 3 : 2   c) 3 : 4   d) 4 : 3

(6) $\frac{(-2X^2Y)^3}{(-4Xy^2)^2}$ = ...

a) $\frac{X}{2Y}$ b) $-\frac{X}{2Y}$ c) $-\frac{X}{2Y}$ d) $\frac{X}{Y}$

[Q2] Complete each of the following:

1) If double the number 2^5 is 2^k then k+ 2 = ...

2) $\frac{3 \times 6 \div 3}{2 \times 1+(3+1)}$ = ...

3) $X^{-3} + X^{-2} = X^{-3}$ (1 +......) when ≠ 0

4) If B ∈ $\overline{AC}$ and $(AB)^2 = 25\text{ cm}^2$, $(BC)^2 = 16\text{ cm}^2$ then AC = ... cm

5) As throwing a fair die once, the probability of appearance a tail ....

[Q3]

A) Find in Q the S.S of each of the following :-

① $5X + 5 = 9X + 13$ ② $7 + 4X > 3$

B) Write the result of the following in standard form :

$$(3.8 \times 10^8) \div (1.9 \times 10^6)$$

[Q4]

A) Two numbers, one greater than the other by 7 and their sum = 47,

Find the two numbers?

B) Simplify $\left(\frac{X^4 \times X^{-3}}{X^{-4} \times X}\right)^{-2}$ where $X \neq 0$ then Find the value if $X = -1$

[Q5]

A) if $X = -\frac{1}{2}$, $Y = 2$, $Z = \frac{3}{2}$ Find in simplest form $X^2 Y^2 + (X + Z)^3$

B) A card is chosen randomly from ten cards numbered from 1 to 10 what is the probability that the chosen card shows

① An odd number ② A prim number

③ An even number ④ An odd number > 3

End of the questions

ALGEBRA – MODEL NO (10)

[Q1] Choose the correct answer:

(1) If $X > Y$, $Z < 0$ *then* XZ .... YZ

a) $>$ b) $=$ c) $\geq$ d) $<$

(2) If $2^X = 3$ then 8^{-X} = ...

a) $\frac{1}{3}$ b) $\frac{1}{9}$ c) $\frac{1}{27}$ d) $\frac{1}{12}$

(3) As throwing fair die once, the probability of appearance of a prime number is ....

a) 2 b) $\frac{1}{6}$ c) $\frac{1}{3}$ d) $\frac{1}{2}$

(4) If $X + 3Y = 7$ then $X + 3(Y + 5)$ = ...

a) 3 b) 7 c) 21 d) 22

(5) The greater solution of the inequality $3 \leq X \leq 6$ *is* ....

a) 3 b) 4 c) 5 d) 6

(6) $3^{10} + 3^{10} + 3^{10}$ = ...

a) 3^{10} b) 3^{30} c) 9^{10} d) 3^{11}

[Q2] Complete each of the following:

1) If $\frac{1}{6}$ of the number $3^5 \times 2^5$ is $(6)^K$ then $\sqrt{k}$ = ...

2) If $(0.004)^2 = 1.6 \times 10^n$ then, n = ...

3) $((-1)^5)^4 - ((-1)^5)^3$ = ...

4) If $\frac{x}{4} = \frac{16}{x}$ then X = ...

5) A bag contains number of like balls 5 of them are white balls and the rest is red balls if the probability of red balls = $\frac{2}{3}$ then the number of all balls = ...

[Q3]

A) Find in Q the S.S of each of the following:-

① $\frac{5}{6}X - 4 = 11$ ② $9 \leq 4X + 1 \leq 17$

B) Write the result of the following in standard form :

$(4.4 \times 10^3) \div (2 \times 10)^5$

[Q4] A) Find three consecutive odd numbers if their sum is 27 ?

B) Simplify $\frac{(x^2)^{-3} \times (x^{-1})^2}{x^{-3} \times x^{-4}}$ where X≠ 0 Find the value when X = −2

[Q5]

A) if $X = -\frac{3}{2}$, $y = \frac{1}{2}$, $Z = -\frac{4}{3}$ Find in simplest form $\frac{x^2\ y^2\ z^2}{X - Y}$

B) A fair die is rolled once and the number of dots on the upper face is observed. write down the sample space , then Find the probability of each of the following events ;

1) getting a number greater than 6

2) getting a number satisfying the inequality $1 \leq X \leq 6$

3) getting a number satisfying the inequality $2 < X < 4$

End of the questions